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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,208	08/22/2003	Hideki Iwata	80329-0014 (W1037-01CI)	9026
23353 7590 06/11/2007 RADER FISHMAN & GRAUER PLLC LION BUILDING 1233 20TH STREET N.W., SUITE 501 WASHINGTON, DC 20036			EXAMINER RONESI, VICKEY M	
			ART UNIT 1714	PAPER NUMBER
			MAIL DATE 06/11/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

**Office Action Summary**

Application No.

10/646,208

Applicant(s)

IWATA ET AL.

Examiner

Vickey Ronesi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 27 March 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,5,6,14,15 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6,14,15 and 17-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/27/07.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. All outstanding rejections are withdrawn in light of applicant's arguments filed on 5/23/2007.
2. In light of an updated search, new grounds of rejection are set forth below. Thus, *a 2<sup>nd</sup> non-final Office action is set forth as follows.*

#### *Claim Rejections - 35 USC § 103*

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
4. Claim 2 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over McWhorter et al (US 3,322,710) in view of Hirai (US 6,057,393) and Kato et al (EP 1 031 726).

McWhorter et al discloses fibrillated polytetrafluoroethylene (PTFE) in a thermosetting resin such as phenol-formaldehyde that is used in bearings (col. 4, lines 57-75, wherein), wherein the particulate PTFE is fibrillated in the thermosetting resin during mixing (col. 4, lines 5-40). A mixture of the resins includes 50-85 wt % phenol formaldehyde and 10-85 wt % PTFE (col. 2, lines 47-56).

McWhorter et al fails to disclose (i) the molecular weight and particle size of the PTFE and (ii) the use of an alkaline earth metal salt.

With respect to (i), while McWhorter et al discloses the use of a fibrillatable PTFE, it fails to disclose the molecular weight and particle size of the PTFE.

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Hirai discloses a sliding member composition and teaches that PTFE having a structure-forming ability having a molecular weight of  $3 \times 10^5$  to  $3 \times 10^7$  such as Teflon 6J (which is the commercially available PTFE used in the instant inventive examples) is advantageously added to provide for reinforcing properties and mechanical properties (col. 3, lines 9-40). The structure-forming PTFE is used in addition to granular PTFE which is used to provide lubricating properties. Teflon 6J has a particle size of 470 microns as disclosed by applicant in paragraph 0029 of the instant specification as originally filed.

Given that Hirai discloses the benefits of using a PTFE with the presently claimed molecular weight and particle size in a sliding member, it would have been obvious to one of ordinary skill in the art to utilize such a PTFE as the fibrillatable PTFE in the sliding composition of McWhorter et al.

With respect to (ii), McWhorter discloses the addition of conventional fillers, etc (col. 3, lines 53-54) but does not disclose the use of an alkaline earth metal salt.

Kato et al discloses a coat layer of a thermosetting resin excellent in wear resistance and teaches that wear resistance additives such as calcium carbonate and barium sulfate are used as wear resistance additives in amounts of 0.05-12 vol % based on a fluorocarbon resin (claim 1, page 3, lines 13-15 and 18-24).

Given that McWhorter et al is open to the use of conventional fillers and further given that Kato et al teaches that alkaline earth metal salts are used as wear resistance additives in a sliding member coating, it would have been obvious to one of ordinary skill in the art to utilize alkaline earth metals in an amount of 0.05-12 vol % in the composition of McWhorter et al.

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5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over McWhorter et al (US 3,322,710) in view of Hirai (US 6,057,393) and Kato et al (EP 1 031 726) and further in view of Tanaka (US 5,780,396).

The discussion with respect to McWhorter et al, Hirai, and Kato et al in paragraph 4 above is incorporated here by reference.

McWhorter et al does not disclose the use of an additional solid lubricant.

Tanaka et al discloses sliding member surfaces containing PTFE and teaches that the use of 0.5-10 vol % of a solid lubricant advantageously further improves friction properties (abstract; col. 2, lines 39-57).

Given that Tanaka et al teaches improved friction properties when using solid lubricant in a sliding member surface, it would have been obvious to one of ordinary skill in the art to utilize an additional solid lubricant in the coat layer of Kato et al to improve friction properties.

6. Claims 3, 6, 14, 15, 17-22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over McWhorter et al (US 3,322,710) in view of Hirai (US 6,057,393) and Kato et al (EP 1 031 726) OR McWhorter et al (US 3,322,710) in view of Hirai (US 6,057,393) and Kato et al (EP 1 031 726) and further in view of Tanaka et al (US 5,780,396), either of which in view of Niwa et al (GB 2 358 866, cited on IDS dated 5/17/2004).

The discussions with respect to McWhorter et al, Hirai, Kato et al, and Tanaka et al in paragraphs 4 and 5 above are incorporated here by reference.

McWhorter et al, Hirai, Kato et al, and Tanaka et al fail to disclose (a) the use of bismuth or (b) a bismuth alloy or a porous layer on the substrate.

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With (a), Niwa et al discloses a sliding material composition and teaches the use of bismuth and bismuth alloy particles in an amount of 3-40 vol % as a wear resistance additive (abstract, page 5, lines 20-26).

Given that McWhorter et al is open to the use of conventional additives such as wear resistance additives having a Mohs hardness of at least 2.5 as taught by Kato et al and further given that Niwa et al teaches the use of bismuth and bismuth alloy particles (Mohs hardness = 2.5) as wear resistance additives, it would have been obvious to one of ordinary skill in the art to utilize bismuth or bismuth alloy particles as the wear resistance additive in the composition taught by Kato et al.

With respect to (b), Niwa et al teaches adhesiveness of a resinous coating composition to a metal substrate is improved by rendering the surface of the substrate porous by sintering metal powder so that the coating composition can impregnate the substrate (page 3, lines 18-21; page 6, lines 1-6).

Given that adhesiveness is improved by using a porous substrate as taught by Niwa et al, it would have been obvious to one of ordinary skill in the art to utilize a porous substrate in the bearing of McWhorter et al to thereby improved adhesion of its coat layer.

A direct comparison to the closest prior art would be to show a difference in fibrillatable PTFEs. It is not made clear if Lublon L-2 of the comparative examples is even fibrillatable like taught by McWhorter et al. Case law holds that comparative showings must compare the claimed subject matter with the closest prior art to be effective. See *In re Burckel*, 592 F.2d 1175, 1179, 201 USPQ 67, 71 (CCPA 1979).

***Response to Arguments***

Applicant's arguments filed 3/27/2007 have been fully considered but they are not persuasive. Specifically, applicant argues that the data in the declaration filed on 3/27/2007 is sufficient to establish unexpected results.

In response, applicant's data is considered to be insufficient because the data is not reasonably commensurate in scope with the scope of the claims. Case law holds that evidence is insufficient to rebut a *prima facie* case if not commensurate in scope with the claimed invention. *In re Grasselli*, 713 F.2d 731, 741, 218 USPQ 769, 777 (Fed. Cir. 1983). Specifically, only one amount of PTFE is exemplified (20 vol %) which is not reasonably commensurate in scope with the claimed 10-40 vol %. Case law holds that whether the unexpected results are the result of unexpectedly improved results or a property not taught by the prior art, the "objective evidence of nonobviousness must be commensurate in scope with the claims which the evidence is offered to support." In other words, the showing of unexpected results must be reviewed to see if the results occur over the entire claimed range (i.e., scope). *In re Clemens*, 622 F.2d 1029, 1036, 206 USPQ 289, 296 (CCPA 1980), MPEP 716.02(d). Furthermore, only one thermosetting resin (phenol-formaldehyde) and one PTFE (avg particle size of 470 micron) are exemplified. Case law holds that evidence of superior properties in one species insufficient to establish the nonobviousness of a subgenus containing hundreds of compounds. *In re Greenfield*, 571 F.2d 1185, 1189, 197 USPQ 227, 230 (CCPA 1978).

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*Conclusion*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Ronesi whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan, can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

6/6/2007  
Vickey Ronesi



/Vasu Jagannathan/  
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